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NASA

National Aeronautics and
Space Administration

UAO Brochure
July 1980

The NASA-University Program: A Guide to Policies and Procedures

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Washington, D.C. 20546

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This document replaces NHB 5100.3 "A Guide to Policies and Procedures for Sponsored Research."

CONTENTS

Introduction 1

Part I. Overview

NASA Objectives 1
NASA Organizational Structure 2
University Program Policies 4
Eligible Institutions 5
University Affairs Office 6
Types of University Relationships 6
  Sponsored Research 6
  Other Relationships 7
NASA's Research Interests 7
  Headquarters Program Offices 8
  Field Centers 10

Part II. Working with NASA

Proposing to NASA 19
  Initial Contact 19
  Technical Correspondence 19
  Unsolicited Proposals 20
  Solicited Proposals 20
Award Instruments 21
  Grants 21
  Cooperative Agreements 23
  Contracts 23
  Other Agreements 23
  Extension Instruments 24
Administration of Awards 24

Part III. Information Sources

Bibliography 29
Addresses 31

Part IV. Appendix

Unsolicited proposal Preparation
and Submission

INTRODUCTION

"The NASA-University Program" denotes the total NASA relationship with colleges and universities. This brochure describes the broad scope of the program by summarizing basic policies, NASA's scientific and technological research interests, procedures for establishing contact with NASA, and the administration of awards. It is intended for several audiences: those seeking information on the general aspects of the program will find the overview part of maximum interest; members of the academic community who have never dealt with NASA will find the second part useful, as will others wishing to update their knowledge of NASA procedures; and while those intimately familiar with NASA's operations may be concerned only with the Appendix containing current guidelines for unsolicited proposal preparation and submission. The Appendix is self-contained and may be used without reference to the other parts of the brochure.

Please note that the material which follows is based on statutory, regulatory, and procurement requirements; however, in the event of any conflict between this brochure and the NASA Procurement Regulation, the Grant and Cooperative Agreement Handbook, or other regulatory material, the later documents shall govern.

PART I – OVERVIEW

NASA OBJECTIVES

NASA's long-range objectives were established by the National Aeronautics and Space Act of 1958. It provides that NASA conduct aeronautical and space activities in such a way as to contribute to: the expansion of human knowledge of phenomena in the atmosphere and space; the improvement of the usefulness, performance, speed, safety, and efficiency of aeronautical and space vehicles; the development and operation of vehicles capable of carrying instruments, equipment, supplies, and lifting organisms through space; the establishment of long-range studies of the potential benefits to be gained from, the opportunities for, and the problems involved in the utilization of aeronautical and space activities for peaceful and scientific purposes; the preservation of the role of the United States as a leader in aeronautical and space science and technology and in the application thereof to the conduct of peaceful activities within and outside the atmosphere; and the most effective utilization of the

scientific and engineering resources of the United States with close cooperation among all interested agencies of the United States, in order to avoid unnecessary duplication of effort, facilities, and equipment.

Two decades later the President announced a civil space policy which presented a balanced strategy of applications, science, and technology development designed to: emphasize space applications that will bring important benefits to the understanding of earth resources, climate, weather, pollution, and agriculture; emphasize space science and exploration in a manner that retains challenge and excitement and permits the Nation to retain the vitality of its space technology base; take advantage of the flexibility of the Space Shuttle to reduce the cost of operating in space; assure American scientific and technology leadership in space; increase benefits for resources expended through closer integration of the national space program; demonstrate advanced technology capabilities in open and imaginative ways; foster space cooperation with other nations; and confirm support for continued development of a legal regime for space that will assure its safe and peaceful use for the benefit of all.

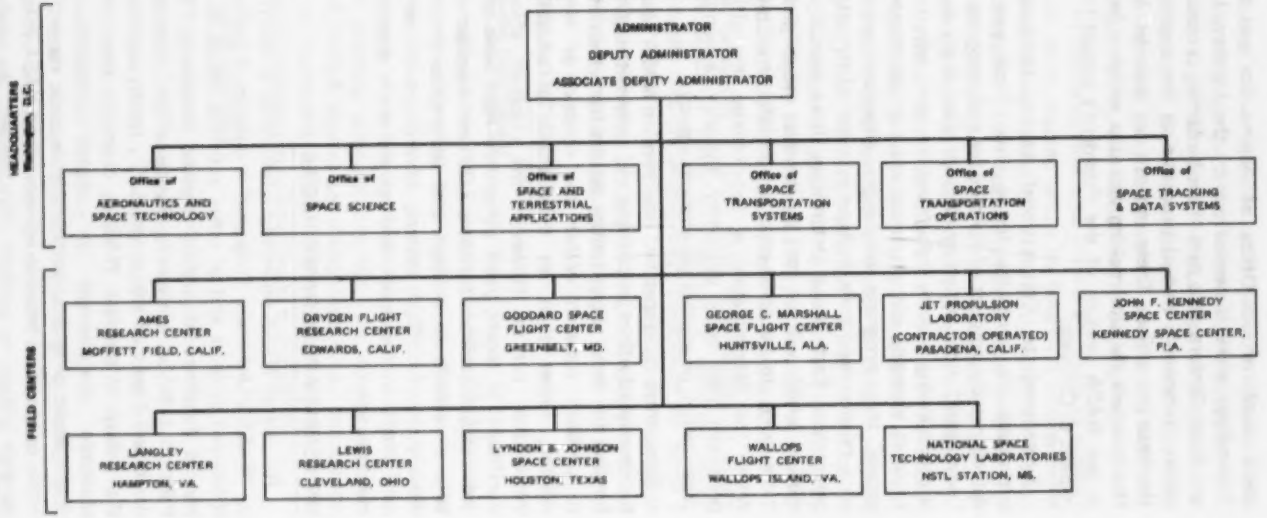
NASA ORGANIZATIONAL STRUCTURE

As may be seen from the abbreviated NASA organizational chart on the next page, all Headquarters program offices and field centers report directly to the Administrator for overall management purposes. However, the Headquarters offices are the source of scientific, engineering, and technological policy and administrative direction, i.e., Headquarters is the control center for the programs and projects which comprise the national aerospace effort. The scientists and engineers in the Headquarters offices are responsible for the technical decisions which must be made in connection with devising, obtaining necessary authorizations, and conducting NASA's programs. The field centers, most of which have extensive in-house research and development (R&D) capabilities, are responsible for conducting various aspects of the NASA mission, as assigned by Headquarters.

Each field center conducts a mix of programs authorized by various Headquarters offices, although the work of some centers is traditionally associated more closely with a single office. For example, Office of Space Science and Office of Space and Terrestrial Applications projects predominate at the Goddard Space Flight Center,

NASA ORGANIZATIONAL STRUCTURE

(Major Program Offices & Field Centers)


ADMINISTRATOR
DEPUTY ADMINISTRATOR
ASSOCIATE DEPUTY ADMINISTRATOR
HEADQUARTERS Washington, D.C.
Office of AERONAUTICS AND SPACE TECHNOLOGY
Office of SPACE SCIENCE
Office of SPACE AND TERRESTRIAL APPLICATIONS
Office of SPACE TRANSPORTATION SYSTEMS
Office of SPACE TRANSPORTATION OPERATIONS
Office of SPACE TRACKING & DATA SYSTEMS
FIELD CENTERS
AMES RESEARCH CENTER MOFFETT FIELD, CALIF.
DRYDEN FLIGHT RESEARCH CENTER EDWARDS, CALIF.
GODDARD SPACE FLIGHT CENTER GREENBELT, MD.
GEORGE C. MARSHALL SPACE FLIGHT CENTER HUNTSVILLE, ALA.
JET PROPULSION LABORATORY (CONTRACTOR OPERATED) PASADENA, CALIF.
JOHN F. KENNEDY SPACE CENTER KENNEDY SPACE CENTER, FLA.
LANGLEY RESEARCH CENTER HAMPTON, VA.
LEWIS RESEARCH CENTER CLEVELAND, OHIO
LYNDON B. JOHNSON SPACE CENTER HOUSTON, TEXAS
WALLOPS FLIGHT CENTER WALLOPS ISLAND, VA.
NATIONAL SPACE TECHNOLOGY LABORATORIES NSTL STATION, MS.

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while much of the Office of Aeronautics and Space Technology work is carried out by the Langley, Lewis, and Ames Centers. As a part of the budgeting process each center "proposes" desired programs to the appropriate Headquarters office. These requests are included in the Headquarters decision-making activities which culminate in the NASA portion of the President's annual budget request to Congress.

Subsequent to Congressional action, Headquarters authorizes the programs for a given fiscal year and determines the amount of funding for each program. This "downward" flow, which involves all levels in the agency, is a continuing process throughout the year; adjustments to meet changing circumstances are not uncommon. In general, these programs and funding allocations are made on a mission-need basis and not in terms of the ultimate performers. Each center determines those aspects of its mission which will be met by in-house capabilities and those parts to be conducted by outside organizations. Where the determination is out-of-house, the ultimate performer may be a university, industry, a non-profit organization, or another government agency.

Thus, there is no specific "line item" in NASA's budget for sponsored effort in colleges and universities. Overall funding for these organizations results from their ability to perform research within the context of NASA's mission, rather than on their status as educational institutions, per se. However, the resultant effort is significant: in recent years obligations have been on the order of $150 million for some 3,000 active projects. The bulk of awards to colleges and universities are made directly by the field centers; however, some awards, particularly in the space sciences are made directly by Headquarters.

UNIVERSITY PROGRAM POLICIES

The overall NASA-university relationship is referred to as "NASA's University Program;" it consists of individual sponsored projects and of other activities which do not involve funding. An official agency statement, "Basic Policy for NASA University Relationships," established the broad intent of the program. To briefly summarize, the policy emphasizes NASA's desire to have strong academic involvement in agency research and development programs, particularly in basic research; to foster cooperation between university and NASA in-house research groups; to conduct relations with the academic

community in a manner that reflects concern and understanding for the role of universities in education and research; to avoid undue imposition of burdensome requirements or taxing a university's financial resources; and to sponsor projects generally compatible with the interest, activities, and capabilities of universities.

In the administrative area, efforts are made to support research of an ongoing nature by long-term arrangements which promote stability and continuity; to design programmatic and administrative requirements for minimal, but adequate reporting; and to use the simplest possible contractual terms and instruments, imposing only those terms and conditions which are necessary. Additional policy guidelines state that advance payment techniques should be used whenever practicable; abrupt changes in funding which adversely affect an institution should be avoided; and, that to the extent permitted by law, it is highly desirable that NASA normally reimburse universities fully for research performed on its behalf.

The University Program, then, is conceptual in nature in the sense of being a collection of activities which individually and in unique ways contribute to NASA's mission, rather than defined by the use of any particular funding instrument, any type of proposal, special activity, or predetermined amount of money.

ELIGIBLE INSTITUTIONS

Domestic Institutions

All colleges and universities otherwise eligible for Federal funding may participate in NASA's university program. There are no specific eligibility requirements prerequisite to obtaining NASA funding or entering into other working arrangements with the agency. In this regard, NASA awards are discretionary, i.e., the agency has no mandated, categorical, or assistance programs subject to statutory specifications as to recipients.

Foreign Institutions

Participation is generally arranged between a foreign government-level sponsoring organization and NASA's International Affairs Division. NASA funding is limited to those exceptional cases where (1) the foreign capability is unique, (2) the urgency of the requests makes it impractical to develop a comparable domestic U.S. capability, and (3) foreign government sponsorship of the research is not feasible.

UNIVERSITY AFFAIRS OFFICE

The University Affairs Office, located within the Headquarters Office of External Relations, is responsible for overview of the entire NASA-University Program. Its primary functions are: to serve as a focal point for NASA-university relationships; to develop and monitor the application of agency-wide policies impacting universities, and to provide information on NASA's sponsored activities. Although its overview responsibilities are agency-wide, it generally does not participate in the detailed operational aspects of the selection, award, and administration of sponsored projects funded by Headquarters program offices and field centers. Institutions or individuals requiring further information on establishing or conducting relations with NASA are encouraged to contact the University Affairs Office for guidance.

TYPES OF UNIVERSITY RELATIONSHIPS

Sponsored Research

The principal and most visible direct interaction between NASA and the university community is the support of university research and development projects. In the broadest form of R&D participation, universities usually conduct research in a basic area applicable to the long-term goals of the various NASA offices. Here the investigator has broad latitude in suggesting research topics likely to expand scientific knowledge in the multitude of areas related to NASA's mission. New NASA research activities and efforts sometimes result from such endeavors. Narrower forms of participation arise when NASA desires university assistance in carrying out previously approved programs. In such instances NASA will announce areas in which research is desired, stating any limits or constraints which may exist. The investigator, however, is still responsible for proposing the actual effort and the manner in which it will be conducted. Proposals for on-board flight experiments are usually announced in this manner.

Sponsored research opportunities also arise under specific programs undertaken from time-to-time. For instance, initiatives to enhance participation of minority institutions; encouragement of joint university-industry-government projects; organizing institutes or consortia for specific purposes; and arrangements for involving faculty and students directly in

NASA work at the field centers. NASA also sponsors a limited number of research-related activities such as information dissemination projects.

Other Relationships

There are a number of techniques, many of which involve little (if any) exchange of funds, for NASA-university cooperation other than the direct support of projects. Most importantly, specialized facilities in NASA research centers may be made available for use under cooperative or reciprocal arrangements. Other opportunities include: postdoctoral awards tenable at NASA centers; NASA-faculty interchanges; teaching courses for NASA employees; work-study programs; Intergovernmental Personnel Act agreements; equipment loans; summer employment; and a wide range of public affairs activities which include speakers, exhibits, loans, and tours. In a limited number of situations, universities may also assist NASA in managerial or support-type efforts which entail special relationships.

Opportunities vary from installation to installation; the bulk are at field installations. The addresses in the next section may be used to obtain further information.

NASA'S RESEARCH INTERESTS

NASA sponsors a wide range of research activities ranging from very specifically defined investigations to broad multidisciplinary enterprises. Some may involve studies, research and technical advancement preliminary to undertaking a flight experiment, but the greater part is made up of basic and applied research related in some way to the improvement or exploitation of flight capabilities and development.

A complete listing of sub-areas of research is not feasible, but insight into NASA's specific current and anticipated research goals can be gained from several sources: discussions with NASA scientists, public announcements of research goals of more than usual interest, related work published in open literature, various NASA and other Government publications and reports of NASA Hearings before Congressional committees. Two NASA documents, "NASA's University Program: Active Projects" and the "Research and Technology Operating Plan Summary" are particularly useful. (See Bibliography.)

Each of NASA's offices has different responsibilities. Within Headquarters the bulk of university projects are sponsored by the Office of Space Science, the Office of Aeronautics and Space Technology, and the Office of Space and Terrestrial Applications. Work of interest to the Offices of Space Transportation Operations and Space Transportation Systems is sponsored primarily through the field centers. Brief descriptions of the research interests of individual program offices and field centers follow.

HEADQUARTERS PROGRAM OFFICES

OFFICE OF AERONAUTICS AND SPACE TECHNOLOGY (OAST)

OAST is responsible for managing NASA's aeronautics, space technology, and energy related technology research programs. Activities in these areas include:

Aeronautics: Fundamental research and technology development to improve the usefulness, performance, speed, safety, and efficiency of U.S. civil and military aeronautical vehicles. The program is broadly based and highly synergistic covering all aeronautical disciplines and provides advanced technology which has broad applications.

Space: Generation of advanced technology that supports and enhances approved space programs; provides technology options for planned programs; and provides the base of knowledge from which future programs will emerge.

Energy: Provides for the effective use of NASA capabilities to accomplish specific technical and programmatic objectives resulting from the national energy policies.

Most of the OAST research projects are conducted and managed at the NASA field centers; therefore, requests for specific information about research projects and opportunities for university research should be directed to the appropriate center. Requests for general information should be directed to:

Office of Aeronautics and Space Technology
Research and Technology Division, Code RT-6
National Aeronautics and Space Administration
Washington, D.C. 20546

OFFICE OF SPACE SCIENCE (OSS)

OSS research and analysis responsibilities include theoretical, experimental, and analytical programs in three general areas: physics and astronomy, planetary exploration, and the life sciences, including medicine. Broad disciplinary efforts relative to each area are:

Physics and Astronomy: Solar terrestrial physics including studies of the ionosphere, magnetosphere, interplanetary medium, sun, and the interconnecting mechanisms coupling their different physical regimes and astronomy and astrophysics, including studies in the cosmic rays, and in the x-ray, gamma ray, ultraviolet infrared, and radio regions of the electromagnetic spectrum.

Planetary Exploration: Studies of planetary surfaces, atmospheres, and magnetospheres; remote sensing of solar system objects including planets and satellites, meteoroids, asteroids, and comets, and the measurement of the particles and fields of interplanetary space.

Life Sciences: Origin, nature, and evolution of life, support of manned space flight including crew selection, space biology and medicine, advanced manned life support systems, flight and ground-based experiments in biology, medicine, biomedical engineering, and planetary biology.

Requests for more detailed information on OSS research interests and other opportunities for universities should be directed to:

Office of Space Science
Management Operations Branch, Code SPS-2
National Aeronautics and Space Administration
Washington, D.C. 20546

OFFICE OF SPACE AND TERRESTRIAL APPLICATIONS (OSTA)

OSTA is the focal point for research and development activities that bear on technologies which can be effectively used for practical benefits on earth. These activities are organized into four major programs:

Resource Observations: Development of basic techniques for sensing characteristics of the earth's surface from space for use in agricultural

commodity management, water resource management, mineral and petroleum exploration, land use assessment, geodynamics, and understanding of crustal processes.

Environmental Observations: Development of techniques for the study of the radiative, chemical, and dynamic processes occurring in the atmosphere and oceans; program areas include upper atmospheric research, global weather, severe storms, climate, environmental quality (including stratospheric and tropospheric pollution), and oceanic processes (including water pollution, ocean dynamics, ice dynamics, and coastal processes).

Space Communications: Development of technology for the efficient and effective use of satellite communications; program areas include the development of the 30/20 GHz band for commercial use, multibeam antennas, and an international search and rescue capacity.

Materials Processing in Space: Development of technologies to utilize the microgravity environment of space for research concerning the effects of gravitational forces on materials processes, and for the production of materials with properties not achievable in earth-based facilities.

Requests for general information should be directed to:

Office of Sapce and Terrestrial Applications
Administration and Management Division, Code ER-2
National Aeronautics and Space Administration
Washington, D.C. 20546

FIELD CENTERS

AMES RESEARCH CENTER (ARC)

ARC research and technology interests include theoretical, analytical, computational, and experimental programs in aeronautics, astronautics, and life sciences. Broad disciplinary areas in each of these general areas are:

Aeronautics: Aerodynamics, fluid dynamics, navigation, guidance, control, avionics, flight simulation, advanced facilities and instrumentation, rotorcraft, vertical and short take off and landing aircraft, short-haul aircraft.

Astronautics: Biomedical research related to space flight, extraterrestrial biological and bio-chemical research, human factors related to aeronautical vehicles space flight biosystems.

The areas are supported with an extensive assortment of wind tunnels, flight simulators, computational facilities, full scale aircraft for aeronautical research and technology and for use as flying laboratories and observatories in space and life sciences research, and many special purpose facilities and laboratories.

Requests for more detailed information should be directed to:

NASA Ames Research Center
University Affairs Office, 241-25
Moffett Field, CA 94035

DRYDEN FLIGHT RESEARCH CENTER (DFRC)

DFRC research and technology includes analytical and experimental programs in atmospheric flight utilizing both manned and unmanned research vehicles, and in programs supporting the Space Shuttle. Broad disciplinary areas relative to these programs are:

Aerodynamics, propulsion systems, loads and structures, aeroelasticity, simulation, control systems, flight dynamics and handling qualities, and human factors.

The research and technology programs are supported by extensive computational facilities, simulation facilities, full scale and subscale aircraft, and other ground based facilities.

Requests for more detailed information should be directed to:

NASA Dryden Flight Research Center
Attn: Code E-ED
P.O. Box 273
Edwards, CA 93523

GODDARD SPACE FLIGHT CENTER (GSFC)

The GSFC mission research and technology responsibilities include the following programs:

Space Science: Astrophysics and solar/terrestrial physics, sensor development and experimentation; flight experiments for scientific solar research; planetary atmosphere analyses; high energy astrophysics, astronomy, and solar physics; extra-terrestrial physics.

Space and Terrestrial Applications: Weather and climate assessment; geodesy; geodynamics; earth resources; upper atmosphere research; environmental monitoring, ocean dynamics, water resources management, and land use.

Space Technology: Sensor development, guidance and control systems; data systems; information extraction.

Space Transportation Systems: Sounding rockets; mission/flight planning; tracking; data acquisitions; earth or solar orbit spacecraft placement; spacecraft technology; instrumentation; systems technology; engineering services.

Space Tracking and Data Systems: Manned and deep space worldwide tracking; flight control; data processing and analysis; mission control systems and facilities; operation and mission support computing and analysis; network engineering, operations, procedures, and evaluation.

Payload Operations: The payload operations control center for earth orbital operations of free flyer payload involves: payload data processing; command and control support; and facility training.

The research and technology program is supported by extensive computational; laboratory testing, ground based tracking, and data acquisition facilities.

Request for more detailed information should be directed to:

NASA Goddard Space Flight Center
Grants Management Officer/Code 100.2
Greenbelt, MD 20771

JET PROPULSION LABORATORY (JPL)

JPL, a contractor-operated (California Institute of Technology) field center, conducts its own programs and deals directly with universities. Primary emphasis is on lunar, planetary, and deep-space automated

scientific missions. Specifically, supporting research and advanced development are conducted in electric propulsion, nuclear power, chemical propulsion, aerothermodynamics, fluid physics and electrophysics, applied mathematics, space power generation, optical and radio astronomy, planetary atmospheres, fields and particles, long-range communications, guidance and control, and systems simulation and analysis techniques.

Requests for more detailed information should be directed to:

Jet Propulsion Laboratory
4800 Oak Grove Drive
Pasadena, CA 91103

JOHNSON SPACE CENTER (JSC)

JSC research and technology includes theoretical, analytical, and experimental programs in three general areas: space and life sciences; data systems and analysis; and engineering. Broad disciplinary areas relative to each program are:

Space and Life Sciences: Biomedical studies, science payloads, management, astrophysics, experimental petrology and mineralogy; trace element and isotope geochemistry, earth observations.

Data Systems and Analysis: Astrodynamic constant and modeling; navigation and attitude studies; orbital and celestial mechanics; remote sensing techniques; satellite theory.

Engineering: Audio/visual communication systems; life support systems; experimental microelectronics; avionics; space environment analysis; propulsion and power; structures and mechanics; spacecraft design.

The research and technology program is supported with numerous advanced scientific laboratories, extensive computational facilities, various environmental test chambers, and other specialized ground-based facilities.

Requests for more detailed information should be directed to:

NASA Johnson Space Center
Office of University Affairs, Code BA
Houston, TX 77058

KENNEDY SPACE CENTER (KSC)

KSC's primary mission is launching chemically fueled space vehicles; it is the Space Shuttle launching facility. Located on Florida's central east coast, KSC occupies some 140,000 acres, includes submerged lands, estuarine systems, and coastal beaches, which provide habitat for more Federally-listed threatened or endangered species than any other Federal reservation in the United States. The diverse ecosystem and important habitat of this semi-tropical region are carefully managed to maximize compatible co-existence of high-technology research and development activities with sensitive flora and fauna of the area. The resultant research falls in the following general areas:

Environmental Sciences: Biological and environmental sciences relating to threatened or endangered species of flora or fauna; applications of technology studies to define safe and acceptable chemical waste disposal methods; techniques for reducing emissions to the air and water; feasibility of water reclamation; atmospheric monitoring of air and water; and biological indicators of environmental quality.

Life Sciences: Botanical species definition for a controlled ecology life support system; exploration of renewable (biological) energy sources; and evaluation of physiological capabilities in aerospace professions.

Remote Sensing Applications: Applications of remote sensing data and concepts for management of earth resources and techniques for processing and interpreting remote sensing data.

Launch Facilities and Equipment: Automated checkout equipment, characteristics, and effects of exotic propellants and fluids, handling and processing of exotic propellants and fluids, digital data processing techniques, advanced communications systems and techniques (such as fiber optics), instrumentation and measuring devices and techniques.

Management Related: Computer assistance to medical practice; medical data management system; and science management.

Requests for more detailed information should be directed to:

NASA Kennedy Space Center
Director of Center Support Operations
Kennedy Space Center, FL 32899

LANGLEY RESEARCH CENTER (LARC)

LARC research and technology includes theoretical, analytical, and experimental programs in three general areas: aeronautics, space, and space and terrestrial applications. Broad disciplinary areas relative to each program are:

Aeronautics: Aerodynamics, fluid physics, propulsion, materials and structures, avionics and controls, human factors, general aviation, low-speed aircraft, high-speed aircraft, transport aircraft.

Space: Entry fluid physics, chemical propulsion, materials and structures, electronics and automation, power and electric propulsion, information systems, space transportation systems.

Space and Terrestrial Applications: Environmental quality, oceanic, upper atmosphere research, Shuttle/Spacelab payload development, resource observation applied research and data analysis.

The research and technology program is supported with wind tunnels, extensive computational facilities, full-scale aircraft and other specialized ground-based facilities.

Requests for more detailed information should be directed to:

NASA Langley Research Center
Office of Research Grants and
University Affairs, MS 105A
Hampton, VA 23665

LEWIS RESEARCH CENTER (LERC)

LERC research and technology activities can be calssified into three major categories: aeronautical propulsion, space propulsion, power and communications, and terrestrial energy and transportation. These categories involve the following disciplinary research areas:

Aeronautical Propulsion: Fans, compressors, and turbines, fuels, combustion fundamentals, pollution, heat transfer, fluid mechanics, materials, structures, lubrication and wear, engine-related noise, bearings, gears, and transmissions, seals and rotor dynamics, computational fluid dynamics (internal flow), inlets and exhaust nozzles, multivariable controls, propellers, icing, measurements, and instrumentation.

Space Propulsion, Power, and Communications: Chemical rockets, electronic (ion) propulsion, photovoltaics, electrochemistry, solid state physics, power devices, heat pipes, plasma physics, space environment effects, microwave generation, amplification, transmission, and conversion, remote sensing applications.

Terrestrial Energy and Transportation: Advanced automotive engines, electric vehicles, general aviation engines, photovoltaics, electro-chemistry, magnetohydrodynamics (MHD), fuel cells, wind turbines, thermionics, coal combustion, pollution reduction.

Requests for more detailed information should be directed to:

NASA Lewis Research Center
Office of the Chief Scientist
21000 Brookpark Road
Cleveland, OH 44135

MARSHALL SPACE FLIGHT CENTER (MSFC)

Research and technology programs cover theoretical and experimental efforts in the space sciences, space and terrestrial applications, and aeronautics and space technology. The general disciplinary areas sponsored by these programs are:

Space Sciences: Optical, x-ray, cosmic ray, and gamma ray astronomy; cometary and meteoroid research; magnetospheric physics; gravitational physics; solar physics, and cryogenics and superconducting instrumentation.

Space and Terrestrial Applications: Atmospheric process and cloud physics; geophysical fluid dynamics research; materials processing in space, including crystal growth; solidification physics; containerless processing; and bioprocessing.

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

THE PREPARATION AND SUBMISSION OF UNSOLICITED PROPOSALS TO NASA

A Guide for Colleges and Universities

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Appendix to "The NASA-University Program: A guide to Policies and Procedures," NASA, University Affairs Office, Code LU-16, Washington, D.C. 20546, July 1980

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Contents

Applicability 1
Policy 1
Definitions 2
Relationship to Award 2
Conformance to Guidance 3
When to Submit 4
Where to Submit 4
Number of Copies 6
Contents 6
Renewal Proposals 12
Length 13
Joint Proposals 13
Acknowledgement 14
Evaluation Procedures 14
Revisions 14
Acceptance 15
Rejection 15
Withdrawal 16
Interagency Coordination 16
Non-University Proposals 16

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The following material is based on and consistent with applicable NASA procurement regulations and other NASA regulatory issuances, however, in case of apparent conflict the formal regulatory language shall take precedence.

Part IV – Appendix

UNSOLICITED PROPOSAL PREPARATION AND SUBMISSION

This appendix, the colored insert, contains complete instructions and guidance for the preparation and submission of unsolicited proposals to NASA by colleges and universities. As the material is independent of the previous sections of this brochure, it may be used as a "stand alone" document for those already conversant with NASA's university program and the related policies and procedures.

Local reproduction and distribution of the guidance in its entirety is both permissable and encouraged. Additional copies of the entire brochure are also available on request from NASA centers and the Headquarters University Affairs Office.

Unsolicited Proposal Preparation and Submission Guidelines

APPLICABILITY

These guidelines apply to all unsolicited proposals, regardless of the NASA installation or agency program for which they are intended. The guidance is intended for colleges and universities; however, it may be used by other organizations, subject to the considerations presented in the final section. To place the least possible burden on the proposer, these general requirements are minimal and uniform; any additional information needed by specific programs is requested only in the announcements for those programs.

POLICY

NASA fosters and encourages the submission of unsolicited proposals relevant to agency mission requirements by: disseminating general information on the scientific and technological areas encompassed by NASA's mission; issuing informative notices about on-going programs and areas of activity; using proposals only for evaluation or review purposes; applying policies and procedures which not only encourage unsolicited proposal submission, but which avoid factors which tend to discourage use of

unsolicited proposal mechanism; and acknowledging proposals, making suitable evaluation, and notifying the proposer of NASA's decision in a timely fashion.

DEFINITIONS

An "unsolicited proposal" is a written offer to perform a task or effort, prepared and submitted by an institution on its own initiative without a formal solicitation from NASA. Contact with agency technical personnel prior to proposal submission is permissable and is encouraged to determine if preparation of a formal submission is warranted. Such discussions, confined to the limited objectives of conveying to the potential proposer an understanding of the agency mission and needs relative to the type of effort comtemplated, do not jeopardize the unsolicited status of any subsequently submitted proposal.

It is important to distinguish between unsolicited proposals and technical correspondence. "Technical correspondence" includes written inquiries regarding NASA interest in research areas, preproposal exploration, technical inquiries, research descriptions or suggestions which request or require no NASA funding. Correspondence of this nature is handled directly between the interested individual or organization and the appropriate NASA office or employee. NASA does not have a "preliminary" or "informal" proposal category; hence, any inquiries or exploratory discussions prior to submission of a complete unsolicited proposal are handled as technical correspondence. This approach is to the proposer's advantage, as experience has demonstrated that abbreviated submissions rarely contain sufficient information to adequately communicate the potential merits of a contemplated project.

RELATIONSHIP TO AWARD

The selection of the support instrument is not determined by the type of proposal. A grant, cooperative agreement, contract, or other agreement may be used to support an effort funded on the basis of an unsolicited proposal. NASA does not have separate "grant proposal" and "contract proposal" categories, so all unsolicited proposals may be prepared in a similar fashion. An accepted unsolicited

proposal serves as the basis for award; however, some additional information may be requested during the procurement process, particularly when NASA determines that the contract instrument is appropriate.

CONFORMANCE TO GUIDANCE

NASA does not have any prescribed forms or formats for preparation of unsolicited proposals; however, it is advisable that proposals conform to the procedural and submission guidelines covered in this brochure.

In order to be considered as a valid unsolicited proposal for formal NASA evaluation, a submission must present a specific project; contain sufficient technical and cost information to permit a meaningful evaluation; be signed by an official authorized to contractually commit the university; not merely offer to perform standard services or to just provide computer facilities or services; and not significantly duplicate a current or pending formal NASA solicitation. If a document does not meet these conditions, a comprehensive evaluation need not be made and the document may be considered and handled as technical correspondence. Unsigned "advance copies" may also be treated as technical correspondence or held in suspense, pending receipt of the properly endorsed version. For minor omissions NASA may elect to request revised or additional material from the proposer, but this may lead to delay in initiating evaluation. In a like manner, proposals which vary widely from these guidelines may suffer unnecessarily long delays in evaluation and confuse the reviewers, particularly where large numbers of proposals in the same research area are subject to peer review. Proposals which fall in areas clearly beyond NASA's mission and for which there is no possibility of funding need not be accepted for formal evaluation and the proposer will be so notified. Otherwise valid proposals submitted to individuals within NASA, rather than to the specified proposal offices, will be considered as formal submissions if subsequently received by the appropriate proposal control unit.

WHEN TO SUBMIT

There are no specific dates for the submission of most unsolicited proposals for new awards, but, as a practical matter, it should be noted that there is greater funding flexibility and availability during the early months in the fiscal year which begins in October. However, all proposals should be submitted 4-6 months in advance of the desired starting date. General announcements of NASA's interests in a specific program area usually list desirable submission dates; these should be observed. Renewal or continuation proposals should be submitted well in advance of the expiration date of the award.

WHERE TO SUBMIT

Proposal handling is decentralized to provide the shortest and quickest route between the proposer and the evaluating office. To avoid delays, care should be taken to submit the official signed copies of proposals in the categories described below to the proper addresses.

Responses to Announcements

Proposals prepared on the basis of general announcements of NASA interest in specific research areas should be addressed exactly as specified in each announcement. These announcements usually deal only with proposals for new projects, but in some instances instructions are also provided for renewal or continuation proposals.

Installation-Specific Proposals

Proposals known to be of interest to a single NASA installation should be sent directly to the proposal control unit of that installation. Proposals in this category include renewals or continuations for awards issued by a particular installation (except where a response to an announcement as described in the preceeding paragraph may be involved), proposals falling into the areas of installation interest, and proposals based on prior technical discussions with installation personnel. The installation proposal control unit addresses on the next page are to be used for unsolicited proposal submissions.

General Proposals

Proposals which do not fall in the above categories and are believed to be of interest to more than one NASA installation or where there is uncertainty as to which installation might be interested should be sent to NASA Headquarters.

In no instance should signed, official copies of proposals be submitted to more than one NASA installation. Official copies submitted directly to individuals may suffer delays in evaluation and may not be reviewed as formal submissions to NASA. Information copies, however, may be forwarded to interested individuals within NASA simultaneous with official submission; their names and installations should be mentioned in the letter of transmittal.

Proposal Control Unit Addresses

NASA Headquarters
University Affairs Office
Proposal Control, Code LU-16
Washington, D.C. 20546

NASA Ames Research Center
University Affairs Office, 241-25
Moffett Field, CA 94035

NASA Dryden Flight Research Center
Attn: Code A-PRP
P. O. Box 273
Edwards, CA 93534

NASA Goddard Space Flight Center
Grants Management Officer/Code 100.2
Greenbelt, MD 20771

NASA Johnson Space Center
Procurement Operations, Code BL
Houston, TX 77058

NASA Kennedy Space Center
Director, Center Support Operations
Kennedy Space Center, FL 32899

NASA Langley Research Center
Office of Research Grants and
University Affairs, MS/105A
Hampton, VA 23665

NASA Lewis Research Center
Operations Office
Procurement Division
Mail Stop 500-302
21000 Brookpark Road
Cleveland, OH 44135

NASA Marshall Space Flight Center
Director of Procurement
Marshall Space Flight Center,
AL 35812

NASA National Space and Technology Laboratories
Earth Resources Laboratory
NSTL Station, MS 39529

NASA Wallops Flight Center
Industry Assistance Office
Wallops Island, VA 23337

NUMBER OF COPIES

NASA requests the fewest copies required for effective evaluation; the number varies according to proposal type. Five copies of new proposals or continuation proposals is the usual requirement, except in the life sciences area where 15 copies should be provided. In the case of renewal proposals it is advisable to check with the NASA technical officer to determine the optimum number. Each general announcement of areas of research interest specifies the number to be submitted.

PROPOSAL CONTENTS

The same general information is needed in all unsolicited proposals in order to permit consideration in an objective and timely manner. Announcements of areas of special research interest may suggest topics in which additional information of greater detail is desirable. When proposals initially prepared for other purposes are submitted to NASA it is best to omit any special submission or transmittal forms required by other recipients ("Catalog of Domestic Assistance" citation numbers do not apply). Each copy should contain all submitted material, including a copy of the transmittal letter if it contains substantive information.

Transmittal Letter or Prefatory Material

- The legal name and address of the institution and specific campus identification, if part of a university system;
- Name and telephone number of the principal investigator and business personnel who may be contacted during evaluation or negotiations;
- Identification of any other organizations to which the same proposal has been submitted;
- Date of submission;
- Signature of a responsible official or authorized representative of the organization or a person authorized to contractually commit or obligate the organization;
- Identification of any NASA announcement with which the proposal is related or names of NASA individuals with whom preliminary discussions have been held;
- Current grant, cooperative agreement, contract, or other agreement number if proposal is for continuation or renewal;
- The statement: "It is agreed that if this proposal is accepted and funded by a research grant, then all appropriate provisions cited in Basic Agreement Number _____ shall apply to the award." (To be used only where such NASA-university basic agreements are already in effect.)
- Amount requested of NASA, desired starting date, and duration of project;
- A brief, scientifically valid project title, intelligible to a scientifically literate reader, and suitable for use in the public press.
- For proposals from foreign universities, an explanation of why foreign funding support is not feasible.

Limited Use of Data Statements

If any information in a proposal is a proposer's trade secret, and it is desired to maintain trade secret rights in the information, the following notice must be affixed to the cover sheet of the proposal:

"NOTICE

Data on pages ___ of this proposal constitute a trade secret. It is furnished to the Government in confidence with the understanding that it will not, without permission of the offeror, be used or disclosed other than for evaluation purposes; provided however, in the event a contract (or other agreement) is awarded on this proposal the Government may obtain in the contract (or other agreement) additional right to use and disclose this data."

Abstract

Include a concise (200-300 word) abstract describing the objective of the proposed research and the method of approach.

Project Description

The main body of the proposal should be a detailed statement of the work to be undertaken and should include: objectives and expected significance, particularly in the context of the national aerospace effort; relation to the present state of knowledge in the field; and relation to previous work done on the project; and to related work in progress elsewhere. The statement should outline the general plan of work, including the broad design of experiments to be undertaken and an adequate description of experimental methods and procedures. Proposals from foreign universities must contain sufficient information on the unique nature of the project and the special capabilities of the proposer to enable NASA to determine whether or not agency research goals in the proposed area could be met in the United States. Any substantial collaboration with individuals not referred to in the budget or use of consultants should be described; however, "subcontracting" substantial aspects of the effort is discouraged. (See also "Joint Proposals.")

When it is expected that the research will require more than one year for completion, the proposal should cover the complete project to the extent that

it can be reasonably anticipated. Principal emphasis should, of course, be on the first year of work, and the description should distinguish clearly between the first year's work and the work planned for subsequent years.

Management Approach

For large or complex efforts involving interactions among numerous individuals or other organizations, plans for distribution of responsibilities and any necessary arrangements for ensuring a coordinated effort should be described. Aspects of any required intensive working relations with NASA field centers which are not logical inclusions elsewhere in the proposal should be described in this section.

Personnel

The principal investigator is responsible for direct supervision of the work and participates in the conduct of the research regardless of whether or not compensation is received under the award. A short biographical sketch of the principal investigator, a list of principal publications, and any exceptional qualifications should be included. In proposals from foreign universities, emphasis on the unique capabilities of the principal investigator is particularly important. Omit social security number and other personal items which do not merit consideration in evaluation of the proposal. Give similar biographical information on other senior professional personnel who will be directly associated with the project. If applicable, list the approximate number of students or other assistants, together with information as to their level of academic attainment. Give the names and titles of any other scientists and technical personnel associated substantially with the project in an advisory capacity.

Facilities and Equipment

Describe available facilities and major items of equipment especially adapted or suited to the proposed research, and any additional major equipment that will be required. NASA appreciates that advanced research is best performed with adequate modern equipment and therefore allows for

the purchase of essential items. However, before requesting a major item of capital equipment, the proposer should determine if sharing or loan of equipment already on campus is a feasible alternative to purchase; where such arrangements cannot be made, the proposal should so state. The need for items which typically can be used for both research and non-research purposes should be explained. NASA does not make grants or contracts for equipment only.

Budget and Allowable Costs

Proposals should contain cost and technical parts in one volume; do not use separate "confidential" salary pages. As applicable, include separate cost estimates for salaries and wages; fringe benefits; equipment; expendable materials and supplies; services; domestic and foreign travel; ADP expenses; publication or page charges; consultants; subcontracts; other miscellaneous identifiable direct costs and indirect costs.

Categorize salaries and wages by principal investigator, other scientific and engineering professionals, graduate research assistants, and technicians and other non-professional personnel.

Estimate all manpower data in terms of man-months or fractions of full-time, distinguishing between academic year and summer effort, as necessary.

Explanatory notes should accompany the budget to provide: identification and estimated cost of major capital equipment items to be acquired; purpose and estimated number and lengths of trips planned; basis for indirect cost computation (including data of most recent negotiation and cognizant agency); and clarification of other items in the budget that are not self-evident. List estimated expenses as yearly requirements by major work phases. For renewals or continuations, include an estimate of any significant amount of unspent or uncommitted funds remaining at the completion of the current period of performance.

Allowable costs, including salary and wage considerations, are governed by Office of Management and Budget Circular A-21 "Cost Principals for Educational Institutions."

Cost Participation

Although NASA normally reimburses universities for the full cost of sponsored efforts performed on its behalf, there are two main exceptions: partial support and cost sharing.

A partial support situation generally arises when NASA is asked to contribute to a project being funded from two or more sources; where NASA funding is desired to augment an ongoing university-funded effort; or, in limited instances, where the intrinsic nature of the effort is such that it is logical and appropriate for NASA and the performer to jointly bear the burden. In cases of partial support, a budget for the entire project should be given, indicating amounts anticipated from the various non-NASA funding sources. The part requested of NASA should be prepared as described in the previous section.

Even where full support is intended, NASA's appropriations acts and subsequent Congressional interpretation require that universities share in the cost of sponsored research when it is demonstratable that the recipient will realize a benefit from the research other than the benefit intrinsic in conducting the research for the Government. As the activities of educational institutions generally do not produce benefits that can be measured as having significance apart from the benefit intrinsic in conducting research for NASA, most NASA awards should not be subject to cost sharing. NASA will request a budget revision at the negotiation state if cost sharing is required in compliance with the statute.

Security

If the proposed research requires access to or may generate security classified information, the institution will be required to comply with applicable Government security regulations. However, proposals should not contain security calssified material.

Current Support

For other current projects being conducted by the principal investigator, provide title of project, sponsoring agency, and ending date.

Special Matters

Include any required statements of environmental impact of the research, human subject or animal care provisions, conflict of interest, or on such other topics as may be required by the nature of the effort and current statutes, executive orders, or other current government-wide guidelines.

RENEWAL PROPOSALS

NASA considers most requests for continuation of grants, cooperative agreements, and contracts in much the same manner as proposals for new endeavors, subject to any specific conditions in the award document. For some types of contracts, NASA may request renewal proposals. It is not necessary that a renewal proposal repeat all of the information that was in the original proposal upon which the current support was based. The renewal proposal should refer to its predecessor, update the parts that are no longer current, and indicate what elements of the research are expected to be covered during the period for which extended support is desired. A description of any significant research findings since the most recent progress report should be included. The renewal proposal should treat in reasonable detail the research plans for the next period and contain a cost estimate for the additional work. The detail in the cost estimate should be similar to that in a new proposal.

To ensure continuity of effort, the institution should make every effort to submit a proposal several months prior to the ending date of the current agreement to allow sufficient time for evaluation and procurement by that date. Four months advance submission is generally the minimum necessary for timely renewal; however, the timing may vary with individual projects and sponsoring NASA installations. A lead time of 5½-6 months may be required for awards made by some NASA offices. To ensure renewal proposals may be kept as brief and direct as possible, the principal investigator is urged to contact the NASA technical officer for specific guidance on each project regarding when the renewal proposal is actually needed, the amount of technical and budgetary information required, and the

number of copies required. On certain types of contracts, the university may be contacted by a NASA Procurement Office with additional guidance for renewal proposal preparation.

LENGTH

There is no specific length requirement for proposals; however, every effort should be made to keep them as brief as possible, concentrating on substantive material essential for a complete understanding of the project. Experience shows that few proposals need exceed 15-20 pages. Any necessary detailed information, such as reprints, should be included as attachments rather than in the main body of the proposal. In this case, a complete set of attachments is necessary for each copy of the proposal. As proposals are not returned, avoid use of "one-of-a-kind" attachments; their availability may be mentioned in the proposal.

JOINT PROPOSALS

Some projects involve joint efforts among individuals in different organizations or mutual efforts of more than one organization. Where multiple organizations are involved, the proposal should be submitted by only one of them. It should clearly describe the role to be played by the other organizations and indicate the legal and managerial arrangements contemplated. In other instances simultaneous submission of related proposals from each organization might be appropriate, in which case parallel awards would be made. While NASA encourages joint university-industry effort, particularly those involving small business firms, it is preferable that the proposal come from the university, if it is the principal performer.

Where a project of a cooperative nature with NASA is contemplated, the proposal should describe the contributions expected from any participating NASA investigators and agency facilities or equipment which may be required, if the work is to be carried out. However, the proposal must be confined only to material to which the university can commit itself. Joint NASA-university proposals or proposals which purport to specify the internal arrangements NASA will actually make are not acceptable.

ACKNOWLEDGEMENTS

All proposals received are acknowledged to the university office which officially submitted the proposal. In some instances, acknowledgement is also made to the principal investigator, particularly when special announcements containing special self-addressed return cards are provided.

EVALUATION PROCEDURE

The principal elements considered in evaluating a proposal are its technical and programmatic relevance to NASA's objectives and intrinsic scientific or engineering merit, the qualifications of the investigator and the investigator's institution, and the overall cost (exclusive of the amount of cost sharing, if any). The extent of evaluation will vary depending on whether a new project is proposed or the effort is a continuation of on-going work such that full review may be required only every two or three years.

Several evaluation techniques are regularly used within NASA. In all cases, however, proposals are reviewed by discipline specialists in the area of the proposal. Some proposals are reviewed entirely in-house where NASA has particular competence; others are evaluated by a combination of in-house people and selected external reviewers, while yet others are subject to the full external peer review technique (with due regard for conflict-of-interest and protection of proposal information), either by mail or through assembled panels. Regardless of the technique, the final decisions are always made by NASA employees. If, during proposal evaluation, additional information is requested, it should be forwarded directly to the requestor.

REVISIONS

Proposals may be revised in the absence of any specific request resulting from the evaluation process. If the university, on its own initiative, wishes to submit additional material or a complete revision, it should be addressed to the proposal control unit to which the proposal was originally submitted. Note that submission of duplicative or overlapping proposals or revisions may delay the evaluation.

Therefore, it is important to clearly identify the original proposal by title, date of submission, to whom submitted, and the NASA–assigned control number to be found in the acknowledgement letter, and to explain the relationship between new material and the previous submission.

ACCEPTANCE

When a proposal is accepted, negotiation and award will be handled by the procurement office in the funding installation. The unsolicited proposal is used as the basis for negotiation with the original submitter. NASA does not allow a proposal or any of the unique ideas in it to be used as the basis of a solicitation or in negotiation with other organizations. Award documents sent to the university for signature should be returned to NASA as soon as possible.

An unsolicited proposal that results in a NASA award becomes part of the record of that transaction and may be available to the public on specific request; however, information or material that NASA and the awardee mutually agree to be of a privileged nature will be held in confidence to the extent permitted by law, including the Freedom of Information Act.

REJECTION

Most proposals which cannot be accepted are usually scientifically sound; the bulk of rejections are the result of low priority in the context of NASA's current or projected mission goals or unavailability of funds. A record copy of a proposal which does not result in an award will be retained by NASA for a limited time period and them destroyed; it will be released to the public only with the consent of the proposer or to the extent required by law. Notification letters are addressed to the individual, usually in the university business office, who made the official submission. Any request for further information on the technical aspects of the evaluations should be directed to the NASA official who signed the notification letter.

WITHDRAWAL

Requests for withdrawal of a proposal should be sent to the NASA office, via the university business office, to which the proposal was originally submitted. The NASA proposal control number contained in the acknowledgement letter should be cited.

INTERAGENCY COORDINATION

It is the proposer's responsibility to make formal submissions to potentially interested agencies according to those agencies' guidelines. Therefore, NASA does not transfer formal university submissions to or accept similar submissions from other agencies, except as they might be related to an interagency funding arrangement. NASA may, however, suggest other agencies which may find the subject matter in a particular proposal to be of interest. Unsolicited proposals submitted to the Jet Propulsion Laboratory are not considered as formal submissions to NASA.

NON-UNIVERSITY PROPOSALS

Although the guidance in this brochure is oriented to academic institutions, most of it is also applicable to industrial, commercial, small business, non-profit, and other non-academic organizations. However, when this guidance is used by those organizations for preparing unsolicited proposals, the following points should be observed.

1. All submission instructions, except those for "General Proposals," apply to non-universities. Therefore, proposals which are believed to be of interest to more than one NASA installation should be formally submitted separately to each installation from which consideration is desired.
2. The proposal should include the type of business, e.g., profit, non-profit, or small business; the type of contract preferred; the period of time for which the proposal is valid; a brief description of the organization, its facilities, and previous work experience in the field of the proposal. Cost sharing is governed by NASA Procurement Regulation 1.362.

3. Advertising material, commercial product offerings, and contributions or inventions are not considered to be unsolicited proposals.

Non-academic organizations or individuals desiring more specific information relative to unsolicited proposals should contact the procurement office of a NASA field installation or the Contracts and Grants Division, Code HW-2, NASA Headquarters, Washington, D.C. 20546. A brochure prepared for these organizations, "Selling to NASA," is available from: Director, Small and Disadvantaged Business Utilization, Code K, National Aeronautics and Space Administration, Washington, D.C. 20546.

Aeronautics and Space Technology: Power systems technology; liquid propulsion systems technology; laser propulsion research; high density electronics and data systems; aircraft hazard avoidance systems research; space materials research; and space structures analysis and verification.

These programs are supported by experimental activities such as balloon and orbiter flight experiments, extensive computational support, and a variety of test facilities including propulsion engine test stands, vacuum chambers, high energy particle devices, and other specialized facilities.

Requests for more detailed information should be directed to:

NASA Marshall Space Flight Center
Assistant for University Relations,
Executive Staff
Marshall Space Flight Center, AL 35812

NATIONAL SPACE AND TECHNOLOGY LABORATORIES (NSTL)

NSTL research and technology includes analytical and experimental programs in three general areas of the Earth Resources Laboratory: space and terrestrial applications; systems development and analysis; and technology transfer. Research relative to each area includes:

Space and Terrestrial Applications: Earth resource observation and data analysis research; remote sensing technique development; evaluation of multi-remote sensor data; and mapping. Environmental systems research includes biomass gas energy generation and wetland waste assimilation modeling.

Systems Development and Analysis: Low-cost systems development based on emerging microprocessor and array processor technology for analyzing satellite acquired data.

Technology Transfer: Transfer of remote sensing and computer technology to natural resource management organizations in the public sector and development of training materials, methodology, and implementation strategy for the technology transfer process.

The research and technology program is supported by computational facilities, aircraft, and other ground-based facilities.

Requests for more detailed information should be directed to:

NASA National Space and
Technology Laboratories
Earth Resources Laboratory
NSTL Station, MS 39529

WALLOPS FLIGHT CENTER (WFC)

WFC provides research facilities, tracking and data acquisition instruments, and program and project management to conduct aeronautical, atmospheric, ocean, space experiments in support of NASA's research and applications programs and national needs. The main research areas are:

Aircraft Operations: A research airport is operated to support NASA's aeronautical research programs which include projects associated with airport-aircraft interface, air traffic control, approach and landing systems, airport configuration, airport environmental studies, noise reduction technology, and general aviation research.

Launch Facilities: Technology and launch facilities are provided for the national sounding rocket program experiment. In particular, the university experimenter regularly conducts research by the use of sounding rockets, balloons, and aircraft in the fields of geosolar physics, astronomy, fields and particles, magnetosphere ionosphere, atmosphere and meterology.

Remote Sensing: Aircraft and laboratories support the development of remote sensing techniques and instrumentation to measure ocean and atmospheric parameters which provide a better understanding of ocean physics, weather and climate, and ultimately leads to improved predictions and trends.

The research and technology program is supported with an instrumented research airport, extensive computational facilities, and other specialized ground-based tracking and data acquisition facilities.

Requests for more detailed informion should be directed to:

NASA Wallops Flight Center
Industry Assistance Office
Wallops Island, VA 23337

Part II – Working with NASA

PROPOSING TO NASA

This part discusses the various means open to academic investigators who wish to participate in NASA's university program, describes the support instruments commonly used, and provides insight into the administrative agreements developed in the context of NASA's university policies, as described in Part I.

Initial Contact

The optimum first approach to NASA depends upon the nature of the effort a potential investigator has in mind and the degree of the investigator's familarity with current NASA efforts. Thus investigators are advised to find out what possibilities exist in their specific areas of endeavor. Using the description material in Part I as a guide, telephone calls or brief letters of inquiry or visits to NASA installations, if convenient, are recommended. If it appears that a community of interest exists, submission of a more formal, written request may be in order. Such requests generally fall into three broad categories: technical correspondence, unsolicited proposals, and solicited proposals.

Technical Correspondence

Frequently the discussions or brief letters mentioned above lead to interchanges of exploratory information as the basis for possible submission of a proposal for formal review. As NASA has no preliminary or informal proposal category, letters of this type are encouraged, but are considered only as technical correspondence between the parties involved.

Requests for participating in other non-research or research-related activities which generally require no interchange of funds are likewise classified as

technical correspondence. Typically these involve use of NASA facilities, personnel interchanges, equipment loans, educational programs, etc.

Unsolicited Proposals

NASA fosters and encourages the submission of unsolicited proposals relevant to agency mission requirements. Proposals may be general or related to NASA-specified program goals.

The general type proposal affords investigators the widest latitude in suggesting research projects she or he would like to pursue. However, to be a strong candidate for sponsorship, the effort must bear on NASA's perceived short- or long-term goals. Initial contact with NASA is strongly recommended prior to preparing a proposal in this category. The Appendix contains detailed guidelines for preparation and submission of unsolicited proposals.

Other proposals may be more program oriented: NASA frequently issues new program announcements noting research areas of particular mission importance in which unsolicited proposal submission would be appropriate. Preliminary discussions with NASA officials are generally unnecessary in such cases. Written requests to be placed on the mailing list for these free announcements should be directed to:

National Aeronautics and Space Administration
Office of Space and Terrestrial Applications
OSTA Steering Committee
Advisory Committee Assistant
Code EP-3
Washington, D.C. 20546

Solicited Proposals

NASA solicits proposals where the extent of agency guidance is definitive in nature. Solicitations in this category are primarily for on-board flight experiment proposals; however, they only contain a description of the mission and the general constraints on the types of experiments which might be suitable. Suggestions for the exact experiments and methodology are left up to the investigator. Addresses on the mailing list, noted above, also receive these solicitations as they are released.

On some occasions NASA may issue formal requests-for-proposals (RFP) for work by universities, although this is rare in basic research areas or for items typically supplied by industry on a production basis. In any event, NASA generally avoids initiating competition between universities and for-profit organizations. Unilaterial use by NASA of a previously submitted unsolicited proposal as the basis for an RFP is prohibited.

AWARD INSTRUMENTS

The decision to "accept" a university proposal is a technical one, made by the particular NASA element which foresees a need for the work and has sufficient funds available for its support. The responsible technical group at Headquarters or at a field center then prepares the required documentation, obtains the necessary programmatic approvals and fiscal certifications, and forwards the completed package to its local procurement office. NASA makes every attempt to keep pre-award "negotiations" as simple as possible, within the constraints of applicable statutes and regulations. Costs are examined for reasonableness and allowability; inadequately supported budget items will be verified. If it is impossible to fund an entire proposal, NASA will make every effort, as appropriate, to negotiate reductions in the proposed cost with a concomitant reduction in the expected level-of-effort.

Instruments used to sponsor research in universities are selected subsequent to the acceptance decision on the basis of the type of effort and the relationship to NASA's requirements. The main types of instruments are grants, cooperative agreements, and contracts.

Grants

The grant is NASA's preferred instrument for support or stimulation of basic research of interest to the agency. Ordinarily, it is based on the grantee's proposal and contains a minimum of express conditions binding the grantee. However, performance consistent with the proposal is both expected and required without contract-type controls which are generally inappropriate for research projects. The

main advantage of a grant, then, is its relative simplicity and flexibility. To the extent permitted by law, NASA uses grants for this reason. Thus, unlike many other agencies, NASA has no "grant program," per se, nor are NASA grants to be considered as "donative assistance" or "conditional gifts."

NASA grants usually are made for initial periods of at least one year, and may be extended for additional periods, using a variety of funding techniques. For certain projects, "one-shot" awards are appropriate. In such instances, the grantee is notified at the time of award that further funding is not anticipated. In a few cases, grants may be fully funded for multiple-year periods. Two techniques are available for providing long-term stability and continuity.

A recently instituted longevity technique is the "continuing award." Under this arrangement NASA obligates funds to support an effort for a one-year period, and states an intention (although not a formal commitment) to support approximate levels of effort for an additional period of time provided funds are available and the results achieved warrant further support within the context of agency programs. The initial proposal serves as the basis for an entire award; therefore, only a brief proposal is required annually for an increase in funding and an extension of the period of performance. Reductions in decision time and paperwork are expected to result in those cases where NASA is able to use this technique.

The other is step-funding in which a project begins with an obligation for full support for the first year, approximately two-thirds of full support for the second year, and one-third for the third year. At the end of the first year, if the grant is renewed, additional money is obligated to raise the second year's funding to full level, the third year to two-thirds, and another year is added at one-third level. The process is iterative. If NASA discontinues support, the institution is assured of funds for an orderly termination of the project over a two-year period. Brief continuation proposals are required each year. While a number of awards are currently step funded, use of the technique for new awards will be possible only for those programs which can afford the initial heavy obligation of funds.

Cooperative Agreements

Cooperative agreements are identical to grants in most terms and conditions. The distinction is that cooperative agreements contain a special provision stating the nature of the relationship between NASA and the recipient: "This award is a cooperative agreement as it is anticipated that there will be substantial NASA involvement during performance of the effort. That is, the recipient can expect NASA collaboration or participation in the management of the project." There is then a statement, mutually agreed to by NASA and the recipient, of the anticipated cooperative interactions which may occur during the performance of the effort. Since the primary responsibility for the pursuit of most basic studies is best left to the initiative of the university researchers, cooperative agreements are generally used only for those unique projects possible only through extensive joint NASA-university activities in which both parties, through joint participation, make substantive contributions to the actual research itself.

Contracts

Contracts are used when the effort, usually of a highly applied or developmental nature, is primarily for NASA's direct use or benefit. They are most commonly used for on-board flight experiments, development, or similar projects involving close scheduling and integration with other efforts, where major hardware subcontracts are involved, or for task order agreements. Therefore, contracts frequently result from solicitations rather than from unsolicited proposals. Cost reimbursable contracts are most common. Advance payment techniques are employed whenever practicable and incremental funding is avoided except on very large, multi-year projects.

Other Agreements

NASA uses special instruments for efforts where conventional grants, cooperative agreements, or contracts are inappropriate. Typical situations involve equipment loans, "no-cost" arrangements, personnel interchanges, use-of-facilities, and joint endeavors. The terms and conditions vary, depending upon the nature of the specific effort.

Extension Instruments

NASA awards may be extended, as appropriate, with additional funding, additional time, or both. Except in unusual circumstances (generally involving a radical change in the nature of the effort or the investigator), the existing grant, cooperative agreement, or contract is augmented rather than negotiating an entirely new instrument. Some form of proposal is required as the basis for such continuations or renewals, although the proposal may be simpler and briefer than required for an initial award. The Appendix contains a fuller discussion of renewal proposals.

ADMINISTRATION OF AWARDS

Awards are administered in accordance with NASA regulations and within the context of the NASA university program policies and concepts. The sections which follow are intended to provide general insight to broad requirements applicable to some key aspects of NASA awards. For detailed guidance in specific cases, the award document or other appropriate regulatory material (see Bibliography) should be consulted. In this regard, it is suggested that complete copies of award instruments be made available to the principal investigators.

Government-Wide Guidelines

The terms and conditions of NASA awards embody and are fully consistent with government-wide administrative guidance such as Office of Management and Budget (OMB) Circulars A-21 and A-110, covering cost principles and administrative principles, respectively. NASA incorporates such guidance in the instruments and instructions provided by the agency, thereby relieving the university of analyzing the OMB, GSA, Treasury, or other circulars to determine what applies to NASA awards. NASA awards are also subject to government-wide public policy requirements expressed by statute, executive orders, or other directives. These cover such areas as Civil Rights, Equal Employment Opportunity, Discrimination, Human Subject Research, Animal Experimentation, Environmental Protection, and Employment of the Handicapped.

NASA Technical Officer

Each NASA project has at least one technical officer who is interested in the progress and the results of the effort. In most cases the technical officer was actually involved in the initial project selection process and arranged for the funding. Principal investigators are encouraged to develop close working relationships with them; however, it is important that the investigators show independence and creativity in their work. Thus, the role of the technical officer will range from advisor where basic studies are involved to working colleague in some types of cooperative efforts where it has been initially agreed that both parties will participate jointly in the substantive aspects of the effort. In highly applied or development areas such as on-board flight experiments, a greater degree of interaction with NASA may be expected. While the technical officer must agree with significant changes in the effort, it is important to note that only the grant or contracting officer is authorized to make the formal approvals which bind NASA.

Business Correspondence and Approvals

Correspondence on business matters under a grant, cooperative agreement, or contract should be signed or endorsed by an official who is legally authorized to bind the institution, and addressed to the appropriate contracting or grants officer. In addition, award instruments generally contain specific addresses for submitting certain documents, such as reports. While information copies of correspondence may be sent to the NASA technical officer, failure to send the official request through university administrative channels to the appropriate administrative office, either within NASA or another agency as specified by the terms of the agreement, frequently results in unnecessary delays.

Technical Reports

NASA desires that all significant research results be published in some form. Technical reports should describe results of research in sufficient detail to be suitable for publication in the open literature. They are generally not required on a regular schedule, but should be submitted whenever warranted by the

progress of the research. Published papers should acknowledge NASA's sponsorship. Copies of manuscripts to be submitted to journals should be furnished simultaneously to NASA and reprints should be provided after publication. Prior review and approval is not required except in unusual cases.

Papers to be published by NASA must meet the agency's requirements for publication. Details may be obtained from the Scientific and Technical Information Branch. (See Addresses Section.)

Status Reports

NASA requires brief, informative semiannual status reports containing concise reviews of the progress of the work under grants and cooperative agreements; quarterly status reports are usually required under research contracts. Substantive findings should, of course, be mentioned, but detailed coverage is best reported in separate documents or technical reports more suitable for broader dissemination. There are minimum requirements; however, and investigators are encouraged to communicate with their NASA technical officers at any time, particularly when events of unusual scientific interest occur.

Financial Reports and Payment

NASA policy encourages the use of advance payments for agreements with educational institutions. When advance payments are made, they will be by either direct Treasury check or the letter-of-credit method, dependent upon the total amount of funds a recipient receives from the administering NASA installation. A quarterly report summarizing Federal cash transactions and forecasting short-term cash needs is required. In the case of contracts, financial management reports may also be required. Reporting requirements will be specified in the award instruments.

No-Cost Time Extension

Funds received but not expended or committed prior to the conclusion of the project must be returned to NASA. However, when the rate of research effort has been less than anticipated and it appears that all of the funds will not be expended

by the termination date, a time extension may be requested. Requests should be extremely explicit (particularly for contracts) as to the reasons the extension is required and what accomplishments are anticipated during the extension period. Although such no-cost extensions usually are allowed when properly supported, the request should be submitted to the grants and contracting officer well before the termination date. For awards which will be continued, any significant amount of unused funds are considered in determining the level of additional funding to be provided.

Change of Principal Investigator

NASA awards are based, in part, on the availability of the principal investigator. When the original investigator is no longer available, permission to substitute a new investigator must be obtained from the grants or contracting officer, or other arrangements made for disposition of the project.

Travel

After an award has been made, specific authorization for domestic travel is not required. However, approval to charge the costs of foreign travel must be obtained on an individual trip basis before the trip is made, even if it was specifically mentioned in the approved proposal. Foreign travel cost authorizations should be requested from the grants or contracting officer as soon as the possibility of such travel arises. Costs of unauthorized foreign travel may be disallowed.

Subcontracts

NASA does not encourage subcontracting of significant parts of the actual research under grants or contracts, such that the main intellectual contributions would be made by other than the proposing investigators. Subcontracting for purposes other than purchase of technical property costing under $1,000, supplies, or services, requires advance approval by the grants or contracting officer. Where subcontracting is suitable, consideration of small businesses and minority firms is desirable.

Equipment

NASA recognizes the need for modern and adequate research equipment in universities and the advantages to both the institutions and the government of leaving the equipment with the institution at the conclusion of the research. Therefore, title to equipment purchased with NASA funds generally vests in the grantee subject to a time-limited option retained by NASA to acquire title to items costing in excess of $1,000. As a practical matter such "recapture" rights are exercised only under unusual circumstances or with extremely specialized items. Title to government furnished equipment (GFE) remains with the government. Special approval is needed to purchase office equipment or other general purpose items.

Patents and Inventions

NASA's enabling legislation requires that the government assume title to any invention resulting from the research awarded by NASA. The Administrator of NASA may waive title to the grantee or contractor if it is determined to be in the public interest to do so, subject to the reservation of a royalty-free license to the government. This requirement does not apply to any invention conceived and actually reduced tc practice before the execution of the research agreement with NASA. A written report must be furnished to NASA covering any invention made during the performance of the research. These invention reports are separate from the previously mentioned status and technical reports.

Termination

NASA reserves the right to terminate projects with universities prior to the planned completion date. However, in view of the significant disruptions to the University's educational activities which may result from such an action, termination (as distinguished from failure to renew or extend) is reserved for those few exceptional situations which cannot be handled in any other way. Where termination is unavoidable, suitable arrangements are made to minimize the impact on the institution.

Transfer of Awards

NASA grants, contracts, or other agreements may not be transferred from one institution to another. Purchased equipment and supplies are the property of the institution, subject to the award terms. Since they do not belong to the investigator, transfer to another institution or NASA usually occurs only when the university determines it has no further use for the items in question. When the principal investigator changes organizational affiliation and desires support for the same research at a new location, a new proposal must be submitted via the appropriate officials at the new institution. Although such a proposal will be reviewed in the normal manner, every effort will be made to expedite a decision. Regardless of the action taken on the new proposal, final reports on the original award are required.

Part III – Information Sources

BIBLIOGRAPHY

The following publications are sources of information on NASA's research interests, organizational structure, and administrative requirements.

1. NASA's University Program: Active Projects – Describes current grants, cooperative agreements, and contracts. Issued annually. Available from National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22151.
2. Research and Technology Operating Plan Summary – Describes currently authorized NASA research areas and responsible individuals. Available from National Technical Information Service, 5285 Port Royal Road, Springfield, VA 22151.
3. New Program Announcements issued periodically. Address requests to be placed on the "AO" mailing list to: National Aeronautics and Space Administration, Office of Space and Terrestrial Applications, OSTA Steering Committee, Advisory Committee Assistant, Code EP-3, Washington, D.C. 20546.
4. NASA Headquarters Telephone Directory – Available from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

5. NASA Authorization Act and HUD-Independent Agencies Appropriations Act – Issued annually. Available from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

6. Hearing Reports – Several Congressional Committees hold annual or ad hoc Hearings on the entire NASA program or selected aspects. Copies of the Hearings reports may be obtained from the Government Printing Office or directly from the committee. Committees and subcommittees with NASA oversight responsibilities are:

United States Senate:
- Appropriations
  - HUD-Independent Agencies
- Commerce, Science, and Transportation
  - Science, Technology, and Space

United States House of Representatives:
- Appropriations
  - HUD-Independent Agencies
- Science and Technology
  - Space Science and Applications
  - Transportation, Aviation, and Weather
  - Science, Research, and Technology
  - Fossil and Nuclear Energy
  - Advanced Energy, Technology, and Conservations R&D
  - Domestic and International Science Planning, Analysis, and Cooperation
  - Environment and Atmosphere

7. Grant and Cooperative Agreement Handbook, NHB 5800.1 – Contains NASA's policies and regulations for award and administration of grants and cooperative agreements. Available from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

8. Guidelines for Acquisition of Investigations, NHB 8030.6 – Contains NASA's internal procedures for the solicitation, evaluation, and selection of space research (on-board flight) experiments. Available from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

9. NASA Procurement Regulation, NHB 5100.2 – Contains NASA's policies and regulations for the award and administration of contracts. Published in the Code of Federal Regulations (C.F.R.), Chapter 18, Title 41. Also available from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

ADDRESSES

The following listing contains the addresses of various NASA offices topically categorized by the most frequently made types of inquiry. Additional addresses, associated with specific discussion topics, appear in the text. General addresses for field installations may be obtained from the research interests section or the Appendix.

General Inquiries

Overall NASA university relationships and policies	NASA University Affairs Office Code LU-16 Washington, D.C. 20546
Activities of specific installations or program offices	See "NASA's Research Interests"

Proposals

Unsolicited Submission to NASA Headquarters or field installations	See Appendix
Responses to Special Announcements and Solicitations	As received document instructs
Review Status	Address to which proposal was originally addressed

Business Relationships

Overall policies, procedures, and regulations	NASA Director of Procurement Code H Washington, D.C. 20546
Inquiries about existing or pending awards from NASA Headquarters	NASA Contracts and Grants Div. Code HW-2 Washington, D.C. 20546

Inquiries about existing or pending awards from field installations	Procurement Office (or grant/contract officer who signed award document) at specific installation

Foreign Awards

General inquiries and policies	NASA International Affairs Div. Code LI Washington, D.C. 20546

Technical Reports and Publications

Submission of Technical Reports	As specified in award document
Policies and Procedures for, and announcements of distribution of technical reports. Guidance on preparation of reports for NASA publication.	NASA Scientific and Technical Information Branch Code NST-40 Washington, D.C. 20546
Unclassified NASA technical publications	National Technical Information Service 5285 Port Royal Road Springfield, VA 22151

Financial Reports

Submission	As specified in award document
Overall policies, procedures, and regulations. Inquiries about existing awards made by Headquarters	NASA Director, Financial Management Division, Code BF-6 Washington, D.C. 20546
Inquiries about existing awards made by field installations	Director of Financial Management at issuing installation

Rights-In-Data

General information regarding patents, inventions, rights to inventions, and copyrights	NASA Assistant General Counsel for Patent Matters, Code GP Washington, D.C. 20546

Other Organizations

Inquiries from industrial organizations; non-educational, non-profit organizations; individuals; and other government agencies	Procurement Office or Small and Disadvantaged Business Utilization Specialist at appropriate installation
Inquiries to NASA Headquarters from small and minority business firms	NASA Director, Small and Disadvantaged Business Utilization, Code K Washington, D.C. 20546

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1 Blue -

National Aeronautics and
Space Administration

Washington, D.C.
20546

Official Business
Penalty for Private Use, $300

THIRD-CLASS BULK RATE

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National Aeronautics and
Space Administration
NASA-451

NASA

POSTMASTER: If Undeliverable (Section 158
Postal Manual) Do Not Return